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Amdt. Dated: 04/12/2006
Off. Act. Dated: 01/12/2006

REMARKS/ARGUMENTS

Reconsideration of this application is respectfully requested in view of the foregoing amendments and discussion presented herein.

1. **Allowability of Claims 15-17 and 30-32.**

The Applicant notes with appreciation Examiner's determination that Claims 15-17 and 30-32 would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims.

2. **Rejection of Claims 1-12, 18-25, 33-34, 42 and 44 under 35 U.S.C. §103(a).**

Claims 1-12, 18-25, 33-34, 42 and 44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the published application of Evans et al. (U.S. Publ. No. 2005/0277426) in view of Gray et al., "Gray" (U.S. Pat. No. 6,674,403). Claims 1, 3, 18, 33 and 42 are independent.

After carefully considering the grounds for rejection, the Applicant respectfully submits that the cited references do not support the grounds for rejection. More particularly, neither reference nor the combination thereof, teaches, suggests, or provides motivation or incentive for the combination of elements recited in the rejected claims. In fact, the Applicant respectfully submits that the cited combination of references discloses different teachings and principles of operation than those recited in the rejected claims. The Applicant's grounds for traversal are discussed in detail below with regard to each independent claim.

(a) **Claim 1:**

Not All Claim Limitations are Taught

The Examiner asserts that Evans teaches detecting proximal motion of a wireless device. It should be recognized, however, that Evans does not teach a mechanism for detecting if proximal motion is occurring, but instead clearly describes a mechanism for detecting which nodes are within range. In the summary of the invention in paragraph [0010] Evans states this as, "*...so as to locate the mobile unit within a known distance of said means for transmitting said second signal*". The

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Applicant has described problems encountered when attempting to detect motion in this manner, including multipath fading problems. These problems are not addressed by Evans, which uses a sequencing of transmission power levels to determine if nodes are within range.

Note that the Examiner admits that Evans does not teach regression analysis, and cites Gray as teaching such analysis. Yet, the Gray reference does not teach regression analysis at all. In addition, the Applicant respectfully submits that Gray is not combinable with Evans, a combination for which the specifics required to frame a proper suggestion, motivation, or incentive to combine have not been established by the Examiner.

From a close examination of the Gray reference, it is readily apparent that the reference does not teach regression analysis. The Examiner relies upon a number of sections of the Gray reference as teaching "*signal strength regression analysis*". However, as will be shown below, that is not what Gray teaches.

Col. 4, lines 4-16 of Gray teaches building a signal strength model using training, as revealed by the excerpt below, and goes on to describe setting up actual access points within a physical space, or its statistical equivalent, a portion of this text is as follows:

"The process of generating a signal strength model is referred to as 'training' the area or system. In accordance with the present invention, the signal strength model can be created in one of at least two manners."

Col. 7, lines 44-55 of Gray similarly teach building a signal strength model in response to placement and obstruction of access points.

Col. 9, lines 1-26 of Gray also describe building a signal strength model with data "*collected from the survey*". The text goes on to describe using a "*digital map*" and manually or automatically building a statistical model of the access points within the map. There are no teachings associated with a regression analysis.

Col.10, lines 14-34 of Gray describes mapping "*communication signal strengths*

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obtained during the survey walkthrough with locales in the defined space". The text goes on to describe the use of a Markov model within the defined space.

From the foregoing, and a close examination of the Gray reference, it can be seen that there is no discussion relating to anything that could be held to be "a *regression analysis*" as recited in Applicant's Claim 1. Instead, Gray teaches mapping transmission patterns from access nodes within a mapped space.

In contrast, Applicant's Claim 1 recites regression analysis which is performed during actual communication between the wireless devices and not during a map building process. Both the Evans and Gray references are drawn to different objects and operating principles, and do not support the rejection of Claim 1 the claims depending therefrom.

Different Objects and Operating Principles

The Evans reference teaches a mechanism for transmitting at different power levels to detect if a node is accessible, such as within 10 meters. This feature is described in the specification, such as at paragraph [0006], which states: "*According to the present invention there is provided a system for locating a mobile unit including means for transmitting a first signal at a relatively high power, means for transmitting a second signal at a predetermined, relatively low power...*", and so forth.

Evans, therefore, is directed at detecting if the nodes are within range of one another and is not directed at determining if a first node is moving within the proximity of a second node. The principles of operation are also clearly different because Evans is based on static (non-moving) signal conditions.

Gray also differs in objects and operating principles from the claimed invention. Gray discusses creating a static map of a region containing fixed nodes. The location of a moving node can then be determined based on the map.

Neither of these references has similar objects or operating principles as taught by the instant application. Furthermore, Evans and Gray cannot be combined because their operating principles are different. No specifics are given as to precisely how this

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combination would be created without affecting the relied-upon references.

Accordingly, the Applicant respectfully submits that Claim 1, as well as the claims that depend therefrom, are patentable over the cited references.

Amendment of Claim 1

The arguments above demonstrate that Claim 1, before amendment in this paper, is patentable over the cited references. For reasons unrelated to the cited references, the Applicant has amended Claim 1 in order to eliminate the use of means-plus-function language. The means-plus-function elements from Claim 1 were replaced using their stated equivalents from Claim 2.

Although the Applicant has traversed the rejection of Claim 1 as discussed above, the amendment also introduces elements that further distinguish the invention therein from the cited references.

In addition, Claim 1 (and the other independent claims) have been amended to recite a time aspect for the regression analysis to bring out with increased clarity the proximity motion aspect of these independent claims.

Therefore, the Applicant respectfully requests that the rejection of Claim 1, and the claims which depend therefrom, be withdrawn.

(b) Claim 3. Independent Claim 3 is drawn to a system for detecting motion of a wireless device. However, the Evans reference does not disclose a mechanism for detecting motion, but a mechanism to determine the location of a wireless device relative to other devices. This shortcoming is discussed above in relation to Claim 1.

In support of the rejection of Claim 3, the Examiner further relies on a combination with Gray in connection with the use of regression analysis. The same portions of Gray are relied-upon by the Examiner as were discussed in relation to Claim 1, above. As already discussed, however, Gray provides no teaching, suggestion, motivation or incentive in support of performing a regression analysis when determining motion.

Furthermore, the objects and operating principles differ between Evans and

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Gray, wherein there is a lack of motivation for this combination which would also be unworkable. The need to perform a survey of the node positions as taught by Gray would be contrary to the intent of discovering if the nodes are within range of each other as the object of Evans.

Accordingly, the Applicant respectfully submits that Claim 3 is patentable over the cited references.

Amendment of Claim 3

The arguments above demonstrate that Claim 3, before amendment in this paper, is patentable over the cited references. For reasons unrelated to the cited references, the Applicant has amended Claim 3 in order to eliminate the use of means-plus-function language. A computer processor and programming term were added, wherein the means elements are recited as being aspects of the recited programming.

Therefore, the Applicant respectfully requests that the rejection of Claim 3, and the claims which depend therefrom, be withdrawn.

(c) Claim 18. Independent Claim 18 is drawn to a method of detecting motion between two wireless devices. However, as discussed above, the Evans reference does not disclose a mechanism for detecting motion, but teaches a method of determining the location of a wireless device relative to other devices using changes in transmission power. This shortcoming is discussed above in relation to Claim 1.

In support of the rejection of Claim 18, the Examiner further relies on a combination with Gray in attempting to support the use of regression analysis. The same portions of Gray are relied-upon by the Examiner as were discussed in relation to Claim 1 and 3, above. As already discussed, Gray provides no teaching, suggestion, motivation or incentive in support of performing a regression analysis when determining motion.

Furthermore, the objects and operating principles differ between Evans and Gray, wherein there is a lack of motivation for this combination which would also be unworkable. The need to perform a survey of the node positions as taught by Gray

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would be contrary to the intent of discovering if the nodes are within range of each other as the object of Evans.

Accordingly, the Applicant asserts that either of the above shortcomings are sufficient to overcome the rejection, although the rejection suffers from a number of additional shortcomings.

Therefore, Applicant respectfully requests that the rejection of Claim 18, and the claims which depend therefrom, be withdrawn.

(d) Claim 33. Independent Claim 33 is drawn to a method of detecting motion between a first wireless node and a second wireless node.

As discussed above, the Evans reference does not disclose a mechanism for detecting motion. Instead, Evans teaches a method for determining the location of a wireless device relative to other devices using changes in transmission power. This shortcoming is discussed above in relation to Claim 1.

Additional aspects of Claim 33 are also incorrectly put forth as being taught by Evans. For instance it is indicated that Evans teaches in paragraph [0040] - [0041], recording signal strength information. It should be noted that Applicant discusses recording these signal strength information for the regression analysis. Evans within sections [0040] - [0041] discloses only the "*measuring of received signal strengths*" which are immediately checked to see if they exceed first and second thresholds. There is no discussion of retaining these measurements, nor any need or benefit ascribed to doing so.

In support of the rejection of Claim 33, Examiner further relies on a combination with Gray in attempting to support the use of regression analysis. The same portions of Gray are relied-upon by the Examiner as were discussed in relation to Claim 1 and 3, above. As already discussed, Gray provides no teachings in support of performing a regression analysis when determining motion.

Furthermore, the objects and operating principles differ between Evans and Gray, wherein a lack of motivation exists for making this combination, which would also

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be unworkable. The need to perform a survey of the node positions as taught by Gray would be contrary to the intent of discovering if the nodes are within range of each other as the object of Evans.

Accordingly, the Applicant asserts that either of the above shortcomings are sufficient to overcome the rejection, with the rejection suffering from additional shortcomings.

Therefore, Applicant respectfully requests that the rejection of Claim 33, and the claims which depend therefrom, be withdrawn.

(e) Claim 42. Independent Claim 42 is drawn to a method of detecting motion in a mobile wireless device with respect to a stationary wireless device.

As discussed above, the Evans reference does not disclose a mechanism for detecting motion. Instead, Evans teaches a method for determining the location of a wireless device relative to other devices using changes in transmission power. This shortcoming is discussed at length in relation to Claim 1.

Additional aspects of Claim 42 are also incorrectly put forth by the Examiner as being taught by Evans. For instance it is indicated that Evans teaches in paragraph [0039] - [0042], calculating signal strength fluctuations. Evans within sections [0040] - [0041] discloses only the "*measuring of received signal strengths*" which are immediately checked to see if they exceed first and second thresholds. There is no discussion of comparing variations of these comparisons, nor is there any need or benefit to doing so in view of the objects and operating principles of Evans.

In support of the rejection of Claim 42, the Examiner further relies on a combination with Gray in attempting to support the use of regression analysis. The same portions of Gray are relied-upon by the Examiner as were discussed in relation to Claim 1, 3, 18 and 33, above. As already discussed, Gray provides no teachings in support of performing a regression analysis when determining motion.

Furthermore, the objects and operating principles differ between Evans and Gray, wherein a lack of motivation exists for making this combination, which would also

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be unworkable. The need to perform a survey of the node positions as taught by Gray would be contrary to the intent of discovering if the nodes are within range of each other as the object of Evans.

Accordingly, Applicant asserts that any of the shortcomings outlined above are sufficient to overcome the rejection, although the rejection suffers additional shortcomings.

Therefore, Applicant respectfully requests that the rejection of Claim 42, and the claims which depend therefrom, be withdrawn.

(f) Claims 2, 4-12, 19-25, 34 and 44. Dependent Claims 2, 4-12, 19-25, 34 and 44 were rejected based on Evans in view of Gray.

Although each of these dependent claims should be considered *a fortiori* allowable in view of the traversing arguments put forth in relation to the parent claims, many of these claims provide additional patentable distinctions which have not been properly considered in the rejection, examples include the following.

Claim 10. Dependent Claim 10 describes tuning of the interval frequency of the beacon frames. The Examiner asserts this is taught in section [0042] of Evans. However, the relied-upon section [0042] of Evans provides no such teaching, and instead merely discusses detecting signals and the inclusion of location information within a beacon frame, neither of which comport to tuning the transmission interval.

Claims 19-20. Dependent Claims 19-20 describe detecting proximity motion within a proximity distance of 15 cm and 5 cm respectively. This aspect is compared with section [0049] of Evans. However, Evans teaches away from these ranges with the distances described being at the far end of communication, which is the object of Evans, at 10 to 30 meters (not centimeters).

It can be seen from the above that at least a number of the dependent claims have not been given due consideration in relation to that which is actually taught by the references.

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3. Rejection of Claims 13-14, 26-29, 35-40 and 45-49 under 35 U.S.C. §103(a).

Claims 13-14, 26-29, 35-40 and 45-49 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the published application of Evans et al. (U.S. Publ. No. 2005/0277426) in view of Gray (U.S. Pat. No. 6,674,403) and the article of Nardone et al. (IEEE Journal, "A Closed-Form Solution to Bearings-Only Target Motion Analysis", copyright 1997).

The above dependent claims should be considered *a fortiori* allowable in view of the discussion relating to their respective independent parent claims.

Although these claims should already be considered allowable, Applicant respectfully objects to the manner in which all of these claims have been dissected and portions separated out of context from the parent claims upon which they rely.

That the paper of Nardone contains phrases associated with regression analysis, does not automatically make obvious any system making use of regression principles.

Nardone solves the "*Bearing only target motion analysis problem*" as seen in the Abstract - a problem that has no 'bearing' (excuse the pun) on the teachings recited in Applicant claims, and further for which no specifics are described as to HOW such a combination could be effected and for what specific purpose in keeping with the objects of the other references.

Therefore, Claims 13-14, 26-29, 35-40 and 45-49 are patentable over the cited references and the rejection should be withdrawn.

4. Rejection of Claim 41 under 35 U.S.C. §103(a).

Claim 41 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the published application of Evans et al. (U.S. Publ. No. 2005/0277426) in view of Gray (U.S. Pat. No. 6,674,403) and the article of Nardone et al. (IEEE Journal, "A Closed-Form Solution to Bearings-Only Target Motion Analysis", copyright 1997), and further in view of Agrawala et al. (U.S. Publ. No. 2005/0243936).

The above dependent claim should be considered *a fortiori* allowable in view of the discussion relating to their respective independent parent claims.

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Although Claim 41 should already be considered allowable, Applicant respectfully objects to the piecemeal comparisons and unsupported combinations characterizing this rejection.

5. Rejection of Claim 43 under 35 U.S.C. §103(a).

Claim 43 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the published application of Evans et al. (U.S. Publ. No. 2005/0277426) in view of Gray (U.S. Pat. No. 6,674,403) and in view of Agrawala et al. (U.S. Publ. No. 2005/0243936).

The above dependent claim should be considered *a fortiori* allowable in view of the discussion relating to their respective independent parent claims.

Although Claim 41 should already be considered allowable, the Applicant respectfully objects to the piecemeal comparisons and unsupported combinations characterizing this rejection.

6. Amendment of Claims 1-49.

Claims 1, 3, 18, 33 and 42. Independent Claims 1, 3, 18, 33 and 42 have been amended to include a time element aspect to clarify proximal motion detection, support found in original claims, such as Claims 25-26, as well as throughout the specification such as paragraphs [0020], [0061] and [0064], and so forth.

Claims 1 and 3 have been further amended to replace the means-plus-function terminology with other conventions. Claim 1 has been amended with material from Claim 2 (as well as a portion of the description within the means element), while Claim 3 was amended by including computer processor terminology to replace the means phrasing.

Claim 18 has been further amended to increase clarity, such as in separating the detecting step from the analyzing step.

Claim 33 has been further amended to eliminate the "sending" and "receiving" terms from the first and second device terms, thus aiding readability.

Claim 42 has been further amended to combine the calculating and analyzing steps thus simplifying the claim, while later in the claim the determining step is

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separated from the regression step to increase clarity.

Claims 2 and 4. The material of dependent Claim 2 has been incorporated into Claim 1, wherein Claim 2 has been amended to recite another aspect. Claims 2 and 4 have been amended to recite that the regression analysis is performed without regard to the transmit power. Support for this aspect is found throughout the specification, including paragraphs [0059], [0061], and [0062].

Claims 3, 6, 8, 10-11, 17-20, 29, 31-32 and 34-39. Dependent Claims 3, 6, 8, 10-11, 17-20, 25-32 and 34-39 have been amended to correct claim dependency recited within the preamble, and/or to correct antecedent basis issues arising from the amendments to parent claims.

Claims 7, 13-14, 24, 26-28, 30 and 44. Dependent Claims 7, 13-14, 24, 26-28 and 30 have been amended to recite accumulating a plurality of signal strength measurements for the regression analysis. Support for accumulating a plurality of signal strength measurements is found throughout the specification, such as paragraph [0020], and elsewhere. Claim 24 has been further amended to reflect back on how the continuous monitoring provides for accumulation of signal strength measurements, which are processed by the regression analysis as a function of time. Support is found within the specification including paragraph [0054] and [0061].

Claims 9, 16, 19, 20-23, 25, 29, 40, 43, and 45-49. Dependent Claims 9, 16, 19, 20-23, 25, 29, 40, 43 and 45-49 have been amended to alter the wording toward improving readability and clarity.

Claim 11. Dependent Claim 11 has been amended toward improving readability of motion detection. Support for the signal strength changes with respect to time is found throughout the specification, such as paragraphs [0052], [0059], [0066] and so forth.

Claim 12. Dependent Claim 12 has been amended to recite the signal strength per time specifics. Support for this aspect is found in the specification, including paragraph [0059].

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Claims 15-16. Dependent Claim 15 has been amended to include the regression analysis recitation as found in Claim 11, in view of changing the claim dependent in the preamble of preceding Claim 14. An unnecessary line about the objects of the operation have been stricken and the term "*accumulated*" used instead of the "*set of recorded*". Claim 16 was changed to depend back to claim 14 and also now recites aspects of the regression analysis.

Claim 24. Dependent Claim 24 has been amended to separate the "*continuous monitoring*" aspects from the "*analyzing*" aspects. Regression analysis is described as being "*as a function of time*" as found in paragraph [0061] of the specification.

Claims 37 and 40-41. Dependent Claims 37 and 40-41 have been amended to replace the 'mobile', 'fixed', wireless designations with the first and second devices as already described in the base claim.

None of the amendments above have been made for the purpose of addressing any anticipation or obviousness rejection or overcoming any cited reference.

7. Amendments Made Without Prejudice or Estoppel.

Notwithstanding the amendments made and accompanying traversing remarks provided above, Applicant has made these amendments toward increasing the clarity of claim coverage. However, Applicant does not acquiesce in the original grounds for rejection with respect to the original form of these claims. These amendments have been made without any prejudice, waiver, or estoppel, and without forfeiture or dedication to the public, with respect to the original subject matter of the claims as originally filed or in their form immediately preceding these amendments. Applicant reserves the right to pursue the original scope of these claims in the future, such as through continuation practice, for example.

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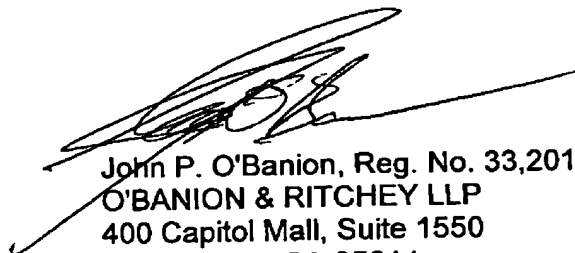
8. Conclusion.

Based on the foregoing, Applicant respectfully requests that the various grounds for rejection in the Office Action be reconsidered and withdrawn with respect to the arguments presented herein, and that a Notice of Allowance be issued for the present Application to pass to issuance.

In the event any further matters remain at issue with respect to the present application, Applicant respectfully requests that the Examiner please contact the undersigned below at the telephone number indicated in order to discuss such matter prior to the next action on the merits of this application.

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Respectfully submitted,



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